

Having described the invention, I claim the following:

1. An apparatus for broadcasting an RF signal comprised of analog FM and digital signals and comprising:

an analog FM source for providing an analog FM signal;

a digital source for providing a digital signal;

a splitter for splitting the FM signal into a fractional portion and remainder portion;

a summer for combining said fractional portion with said digital signal to provide a first combined signal;

a main FM transmitter for amplifying said remainder portion to provide an amplified FM signal;

a digital transmitter for amplifying said first combined signal to provide an amplified combined signal; and

a combiner that combines said amplified FM signal and said amplified combined signal to provide a composite RF signal to be broadcasted.

2. An apparatus as set forth in claim 1 including a phase adjuster located intermediate said splitter and said summer for adjusting the phase of said fractional portion.

3. An apparatus as set forth in claim 2 wherein said phase adjuster is manually adjustable.

4. An apparatus as set forth in claim 2 wherein said combiner is signal coupler having a coupling coefficient in the range from about -3dB to about -9dB.

5. An apparatus as set forth in claim 4 wherein said adjuster is manually adjustable.

6. An apparatus as set forth in claim 2 wherein said combiner is a signal coupler having a coupling coefficient on the order of around -5dB.

7. An apparatus as set forth in claim 6 wherein said adjuster is manually adjustable.

8. An apparatus as set forth in claim 1 wherein said digital source is an IBOC source and said digital signal is an IBOC digital signal.

9. An apparatus as set forth in claim 8 including a phase adjuster located intermediate said splitter and said summer for adjusting the phase of said fractional portion.

10. An apparatus as set forth in claim 9 wherein said adjuster is manually adjustable.

11. An apparatus as set forth in claim 8 wherein said combiner is a signal coupler having a coupler coefficient on the order of about -3dB to about -9dB.

12. An apparatus as set forth in claim 11 wherein said adjuster is manually adjustable.

13. An apparatus as set forth in claim 8 wherein said combiner is a signal coupler having a coupling coefficient on the order of about -5dB.

14. An apparatus as set forth in claim 13 wherein said adjuster is manually adjustable.

15. An apparatus for broadcasting an RF signal comprised of analog FM and digital signals comprising:
an analog FM source for providing an analog FM signal;

a digital source for providing a digital signal;

a splitter for extracting a fractional portion of said FM signal;

a summer for combining said fractional portion and said digital signal to provide a first combined signal;

a main FM transmitter amplifying a remainder portion of said FM signal less said fractional portion and provides an amplified FM signal;

a digital transmitter for amplifying said first combined signal to provide an amplified combined signal; and

a combiner that combines said amplified FM signal and said amplified combined signal to provide a composite RF signal to be broadcast.

16. A method for broadcasting an RF signal comprised of analog FM and digital signals including the steps of:

providing an analog FM signal;

providing a digital signal;

extracting a fractional portion of said FM signal;

combining said fractional portion with said digital signal;

amplifying the FM signal portion remaining after said fractional portion has been extracted to provide an amplified FM signal;

amplifying said first combined signal to provide an amplified combined signal; and

combining said amplified FM signal with said amplified combined signal to provide a composite RF signal to be broadcast.

17. A method as set forth in claim 16 including the step of adjusting the phase of said fractional portion.

18. A method as set forth in claim 17 including the step of manually adjusting the phase of said fractional portion.

19. A method as set forth in claim 16, wherein said digital signal is an IBOC signal.

20. A method as set forth in claim 19 including the step of adjusting the phase of said fractional portion.